

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

5

Listing of Claims:

- 1      Claim 1 (Currently Amended) A method of finding rules and exceptions from a
- 2      database is characterized by adopting four stages and their realization on computers,
- 3      the four stages comprising:
  - 4                an adaptive stage for creating a parameter file as the rules and exceptions
  - 5                finding conditions according to ~~the a~~ receipted specification that is decided by a user,
  - 6                and displaying ~~the a~~ result of generated rules and exceptions to the user;
  - 7                a data model stage for analyzing ~~the a series~~ of parameters from said
  - 8                parameter file and retrieving data from one or more databases according to the series
  - 9                of parameters;
  - 10               a problem formulator stage for transforming said retrieved data into a
  - 11               formalized data structure suitable for said series of parameters, and creating ~~the a~~
  - 12               possible catalog of attributes; and
  - 13               a solving stage for generating rules and exceptions from said formalized data
  - 14               by using said series of parameters and said catalog, and sending the result of
  - 15               generated rules and exceptions to said adaptive stage.

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1 Claim 2 (Currently Amended) The method of Claim 1, wherein said solving stage  
2 further includes three sub-stages, comprising:

3                 a getsupport sub-stage for computing ~~the a~~ support number of each  
4 attribute combination from said attribute catalog;

5                 a getrule sub-stage for determining ~~the a~~ confidence value for the attribute  
6 combination based on said support number, and then finding the rules that can meet  
7 ~~the a~~ condition restricted by said series of parameters, and then determining the  
8 exceptions according to said existing rules and ~~the a~~ maximum exception number given  
9 by the parameter file; and

10                 a getresult sub-stage for saving said rules and exceptions that are  
11 generated in said getrule sub-stage into a text file.

1 Claim 3 (Currently Amended) The method of Claim 2, wherein the getsupport sub-  
2 stage computes said support number by adopting a bitmap method which computes ~~the~~  
3 a bitmap value of said each attribute combination.

1 Claim 4 (Currently Amended) A program for the computer realization of a method to  
2 find rules and exceptions from a database characterized by adopting four stages, said  
3 four stages comprising:

4                 an adaptive stage for both creating parameter file as the rules and  
5 exceptions finding conditions according to ~~the a~~ receipted specification that is decided  
6 by a user, and displaying ~~the a~~ result of generated rules and exceptions to the user;

7                 a data model stage for both analyzing ~~the a~~ series of parameters from  
8 said parameter file, and retrieving data from a database according to the series of

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9 parameters;

10 a problem formulator stage for both transforming the retrieved data into a  
11 formalized data structure suitable for the series of parameters, and creating ~~the a~~  
12 possible catalog of attributes; and

13 a solving stage for both generating rules and exceptions from the  
14 formalized data by using the series of parameters and the catalog, and sending the  
15 result of generated rules and exceptions to the adaptive stage.

1 Claim 5 (Currently Amended) The program of Claim 4, wherein said solving stage  
2 comprises three sub-stages including:

3 a getsupport sub-stage for computing ~~the a~~ support number of each  
4 attribute combination from the attribute catalog;

5 a getrule sub-stage for both obtaining ~~the a~~ confidence value for each  
6 attribute combination based on the support number, and finding the rules that can meet  
7 ~~the a~~ condition restricted by the parameter file, and then obtaining the exceptions  
8 according to the existing rules and ~~the a~~ maximum exception number given by the  
9 parameter file; and

10 a getresult sub-stage for saving the rules and exceptions that are  
11 generated in getrule sub-stage into a text file.

1 Claim 6 (Currently Amended) The program of Claim 5, wherein said getsupport stage  
2 computes the support number by adopting ~~the a~~ bitmap method which computes ~~the a~~  
3 bitmap value of each attribute combination.

1 Claim 7 (Currently Amended) A computer readable recording medium which has  
2 recorded therein a program for the computer realization of a method used to find rules  
3 and exceptions from a database characterized by adopting four stages, the four stages  
4 comprising:

5 an adaptive stage for both creating a parameter file as the rules and  
6 exceptions finding conditions according to ~~the a~~ receipted specification that is decided  
7 by a user, and displaying ~~the a~~ result of generated rules and exceptions to the user;

8 a data model stage for both analyzing ~~the a~~ series of parameters from said  
9 parameter file, and retrieving data from a database according to the series of  
10 parameters;

11 a problem formulator stage for both transforming the retrieved data into a  
12 formalized data structure suitable for the series of parameters, and creating ~~the a~~  
13 possible catalog of attributes; and

14 a solving stage for both generating rules and exceptions from the formalized  
15 data by using the series of parameters and the catalog, and sending the result of  
16 generated rules and exceptions to the adaptive stage.

1 Claim 8 (Currently Amended) The recording medium of Claim 7 further including  
2 recorded therein a program for three sub-stages of said solving stage, the three sub-  
3 stages including:

4 a getsupport sub-stage for computing ~~the a~~ support number of each  
5 attribute combination from the attribute catalog;

6 a getrule sub-stage for obtaining ~~the a~~ confidence value for each attribute  
7 combination based on the support number, and then finding the rules that can meet ~~the~~

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8   a condition restricted by the parameter file, and then obtaining the exceptions according  
9   to the existing rules and ~~the~~ a ~~m~~ximum maximum exception number given by the  
10   parameter file; and

11                 a getresult sub-stage for saving the rules and exceptions that are  
12   generated in getrule sub-stage into a text file.

1   Claim 9 (Currently Amended) The recording medium of Claim 8 further including  
2   recorded therein, a program for said getsupport sub-stage for computing the support  
3   number by adopting ~~the~~ a bitmap method to compute ~~the~~ a bitmap value of each  
4   attribute combination.